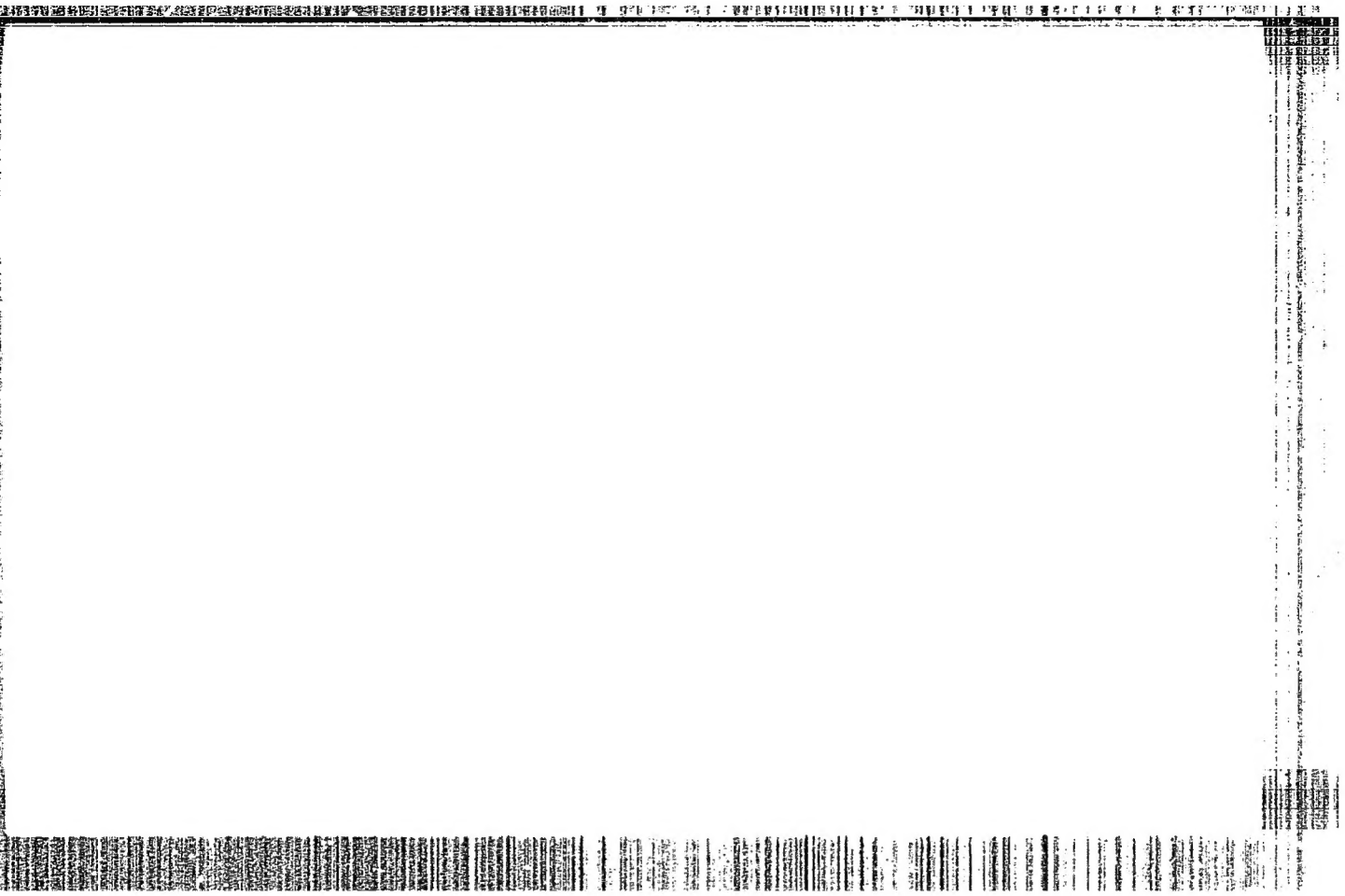
KITAYGORODSKIY, I.I., doktor tekhn. nauk, prof.; ZHITOMIRSKAYA, M.Z.; ARCHAKOVA, R.A.; MIKHAYLOVA-BOGDANSKAYA, Z.A.; BARINOVA, A.F.

Investigating methods of reducing the volumetric weight of foam glass. Trudy VNIIStekla no.37:3-11 '57. (MIRA 11:1)
(Glass, Cellular)



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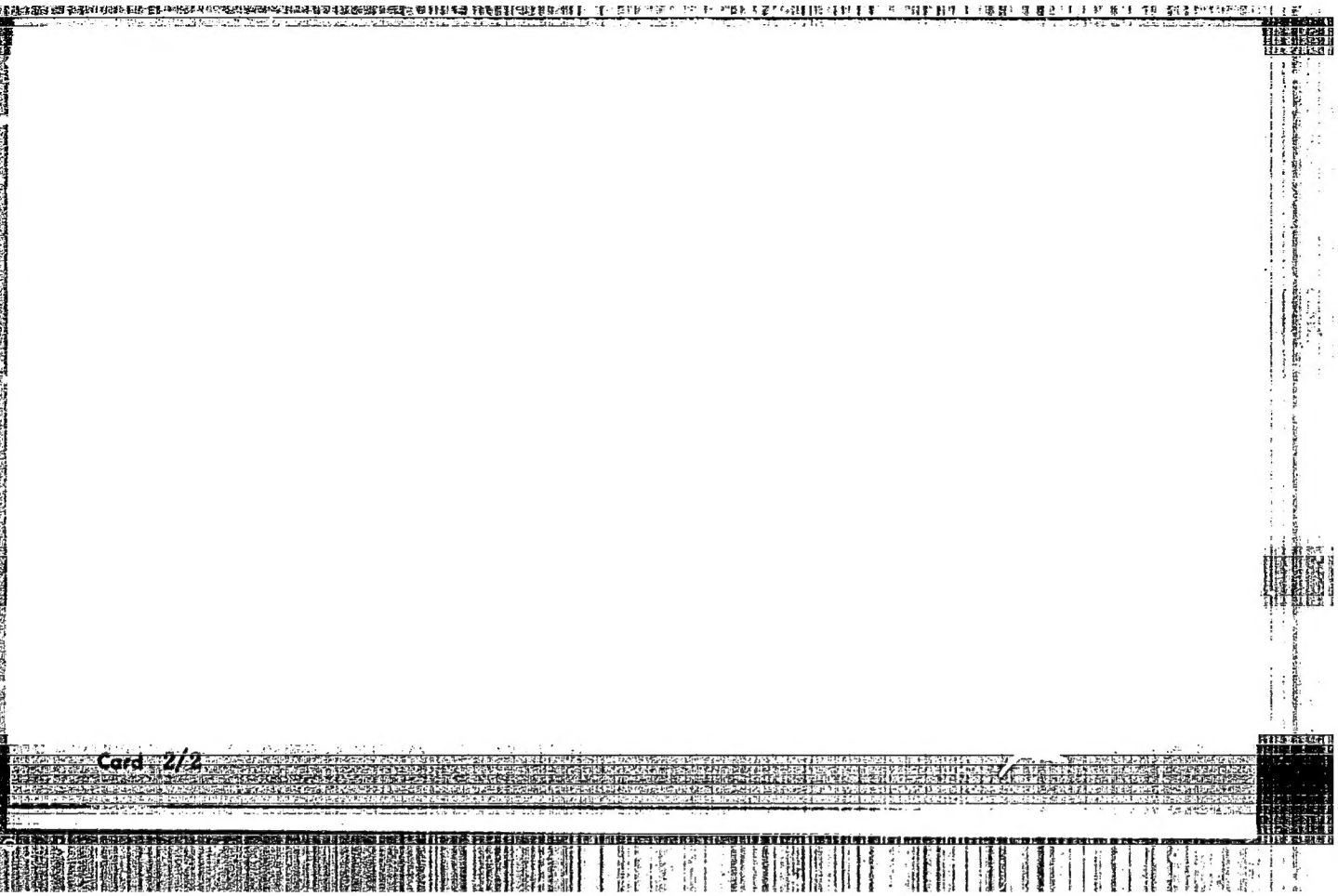

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064820016-2"

ZHITOMIRSKIY, Aleksandr; KUZ'MICHEV, M., red.

Moskva. Moscow. Moskva, Gos.izd-vo izobraz.iskus., 1963. 86 p. (MIRA 17:9)

ZHITOMIRSKIY, Aleksandr

"United in fighting!" Sov.foto 22 no.5:32 My '62. (MIRA 15:5)
(Photography, Composite--Exhibitions)
(Germany, East--Exhibitions)

ZHITOMIRSKIY, A.

A sharp weapon. Sov. foto 18 no.5:23-26 My '58. (MIRA 11:5)

1. Glavnyy khudozhnik zhurnala "Sovetskiy Soyuz".
(Photography, trick)

KUDRA, O.K.; FIALKOV, Yu.Ya.; ZHITOMIRSKIY, A.N.

Radioisotopic method for determining the transfer numbers in secondary systems and individual electrolytes. Zhur. neorg. khim. 8 no.7:1737-1741 Jl '63. (MIRA 16:7)

1. Kiyevskiy politekhnicheskiy institut i Institut khimii AN Tadzhikskoy SSR.
(Radioisotopes)
(Ions--Migration and velocity)

KUDRA, O.K.; FIALKOV, Yu.Ya.; ZHITOMIRSKIY, A.N.

Transfer numbers in the system sulfuric acid - acetic acid.
Zhur. neorg. khim. 8 no.7:1742-1748 Jl '63. (MIRA 16:7)

1. Kiyevskiy politekhnicheskiy institut i Institut khimii AN Tadzhikskoy SSR.
(Sulfuric acid) (Acetic acid)
(Ions--Migration and velocity)

KUDRA, O.K.; ZHITOMIRSKIY, A.N.; FIALKOV, Yu.Ya.

Electric transfer of ions in absolute sulfuric acid. Dokl. AN SSSR 151 no.2:377-379 Jl '63. (MIRA 16:7)

1. Kiyevskiy politekhnicheskiy institut. Predstavleno akademikom V.I.Spitsynym.
(Ions--Migration and velocity) (Sulfuric acid)

SOLOZHENKIN, P.M.; GLEMBOTSKIY, V.A.; OGNEVA, L.L.; ZHITOMIRSKIY, A.N.

Complex utilization of waste at the Maikhura concentrating mill.
Izv. Otd. geol.-khim. i tekh. nauk AN Tadzh.SSR 1:33-44 '60.
(MIRA 15:1)

1. Institut khimii AN Tadzhikskoy SSR.
(Ore dressing) (Salvage (Waste, etc.))

KUDRA, O.K.; FIALKOV, Yu.Ya.; ZHITOMIRSKIY, A.N.

Transference numbers in the systems formed by water with sulfuric and orthophosphoric acids. Zhur. neorg. khim. 9 no.10:2454-2457 O '64. (MIRA 17:12)

1. Kiyevskiy politekhnicheskiy institut i Institut khimii AN Tadzhikskoy SSR.

FIALKOV, Yu.Ya.; ZHITOMIRSKIY, A.N.; KUDRA, O.K.

Transport numbers in binary systems formed by sulfuric acid with orthophosphoric and monochloroacetic acids. Zhur.neorg. khim. 10 no.4:934-938 Ap '65. (MIRA 18:6)

1. Kiyevskiy politekhnicheskiy institut i Institut khimii AN Tadzhikskoy SSR.

KIRAKOV, V.A.; ZHELTOVERSKIY, A.N.

Transference numbers as a method of the physicochemical analysis of binary systems. Zhur. fiz. khim. 39 no.8: 1922-1926 Ag '65. (MIRA 18:9)

1. Kiyevskiy politekhnicheskiy institut i Institut khimii AN Tadzhikskoy SSR.

ZHITOMIRSKIY, B.

Step by step. Prom.koop. 13 no.2:11 F '59.

(MIRA 12:4)

1. Starshiy inzhener proizvodstv emnogo otdela Kirgizpromsoveta, g. Frunze.

(Frunze—Glass manufacture)

ZABLONSKIY, K.I., kand. tekhn. nauk, dotsent; ZAK. P.S.; ZHITOMIRSKIY, B.Ye.; FEDOROV, G.D.

Standardization of globoid reducing worm gears. Nauch. zap. Od. politekh. inst. 39:16-26 '61 (MIRA 17:3)

ZHITOMIRSKIY, E.G., inzhener.

Mechanization of labor-consuming work in lumbering and cost of lumber. Mekh.trud.rab. 8 no.6:32-35 Ag-S '54. (MLRA 7:9)
(Lumbering--Machinery)

ZHITOMIRSKIY, Emanuil Grigor'yevich; KIRILLOV, D.I., red.; MYAGKOV, V.A., red.izd-va; IVANCHENKO, N.A., tekhn.red.

[Finance and credit in enterprises of the lumber industry] Finansirovanie i kreditovanie predpriiatii lesnoi promyshlennosti. Moskva, Goslesbumizdat, 1957. 67 p. (MIRA 11:4)
(Lumber trade)

ZHITOMIRSKIY, G.I. (Saratov)

Lattice of congruence relationships in a generalized pile. Izv. vys.ucheb.zav.; mat. no.1:56-61 '65. (MIRA 18:3)

ZHITOMIRSKIY, I.B.

KUMMERMAN, V.G., inzh.; ZHITOMIRSKIY, I.B., inzh.; VYAZNIKOVTSEV, O.I., inzh.

Gyroscopic orientation of Donets Basin mines. Ugol' 33 no.2:34-35 F '58. (MIRA 11:2)

1. Yuzhno-Ural'skoye otdeleniye Soyuzmarkshtresta. (Mine surveying) (Gyroscope)

Author. 4-U Mine-Surveying Trust

ZHITOMIRSKIY, I. B. (Engineer)

"The problem concerning the influence of external torques on the stability of readings of the gyrocompass with centering control of the sensing element on a pivot."

paper presented at the Second Scientific and Technical Intervuz Conference on Problems of Contemporary Gyroscopy, Ye. F. Otvagin, Secretary of the Organization Committee; Leningrad, Izvestiya Uchebnykh Zavedenity, Priborostroyeniye, No. 5, Sep/Oct 1958, pp 161-163

The Second Intervuz Conference on Problems of Contemporary Gyroscopy Technique convoked by decision of the Ministry of Education USSR, took place in the Leningrad Institute of Precision Mechanics and Optics from 24 to 27 November 1958.

28957
S/146/61/004/003/006/013
D217/D301

13, 2520

AUTHOR: Zhitomirskiy, I.B.

TITLE: The influence of external torque forces on the stability of a gyrocompass with a centering sensitive element (SE) on the needle

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Priborostroyeniye, v. 4, no. 3, 1961, 59 - 67

TEXT: Naval gyrocompasses are bulky, not fireproof and slow whereas the present gyrocompas (SE) has no such defects. It, (SE) has pendulum momentum, with SE centering on the needle and is weightless in liquid. The SE is cylindrical. The differential equation is

$$\left.\begin{aligned} &A_0\frac{dp}{dt}+\left(C_0-B_0\right)qr+C_0\left(\frac{dr}{dt}\cdot\beta-r\dot{\alpha}\theta-ru_1\theta\right)+B_0\left(\frac{dq}{dt}\cdot\theta+\right.\\ &\left.+q\dot{\alpha}\beta+qu_1\beta\right)+H\cos\beta_1\left(\dot{\beta}+u_2\sin\alpha\right)+H\sin\beta_1\left(\theta u_2\cos\alpha-\right.\end{aligned}\right| \qquad (1)$$

Card 1/7

The influence of external ...

$$
\left.
\begin{aligned}
&-\beta u_2 \sin\alpha\Big) + \frac{dH}{dt}\left(\sin\beta_1 + \beta\cos\beta_1\right) + A_{pr}\left(ru_2\theta\cos\alpha - \right.\\
&-ru_2\beta\sin\alpha - pu_2\sin\alpha - \dot{\beta}p\Big) - A_{pr}\left(\frac{dp}{dt}\beta - \frac{dr}{dt}\right) = Q_\alpha\\
&B_0\frac{dq}{dt} + \left(A_0 - C_0\right)rp - A_0\left(p\beta\dot{\alpha} + u_1\beta - 0\frac{dp}{dt}\right) + C_0r\left(p - \dot{\alpha} + \right.\\
&+u_1 + u_2\beta\cos\alpha\Big) - \frac{dH}{dt}0\sin\beta_1 + H\sin\beta_2\left(r - \dot{\alpha}\beta - u_1\beta\right) -\\
&-H\cos\beta_1\left(u_1 + \dot{\alpha} - u_2\beta\cos\alpha\right) + A_{pr}\left(\frac{dr}{dt}\theta + \dot{\theta}r - ru_2\cos\alpha\right) +\\
&+A_{pr}\left(u_1 + \dot{\alpha} + u_2\beta\cos\alpha\right)p = Q_\beta\\
&C_0\frac{dr}{dt} + \left(B_0 - A_0\right)qp + A_0p\left(\dot{\alpha}\theta + \dot{u}_1\theta\right) - B_0q\left(\dot{\alpha} - p + u_1\right) +\\
&+\frac{dH}{dt}\cos\beta_1 - H\sin\beta_1\left(q - u_1\theta - \dot{\alpha}\theta\right) + A_{pr}\left(qr - u_1\theta r - \right.\\
&-\dot{\alpha}\theta r - \frac{dp}{dt}\Big) = -Q_\theta\\
&\frac{dH}{dt} = Q_\rho
\end{aligned}
\right\} \quad (1)
$$

Card 2/7

The influence of external ...

where α, β, θ - angles as generalized coordinates (Fig. 2), ρ - rotor angle of rotation, p, q, v - instantaneous angular velocities of the floater in relation to the moving coordinates, H - main kinetic momentum of the system, u_1 and u_2 - vertical and horizontal components of earth rotation speed, Q_α, Q_β, Q_θ, Q_ρ - generalized forces along their appropriate axis, β - constructional angle between the normal of the SE axis of symmetry and rotor rotation axis

$$H = C_1(\dot{\rho} + p\sin\beta_1 + r\cos\beta_1);$$

$$A_0 = A + A_1\cos^2\beta_1;$$

$$B_0 = B + B_1 + mS_0^2;$$

$$C_0 = C + mS_0^2 + A_1\sin^2\beta_1;$$

$$A_{\rho r} = A_1\sin\beta_1\cos\beta_1.$$

Card 3/7

The influence of external ...

where m - total mass of SE; S_{o1} - distance between the centering point and center of gravity of SE; C_1 - moment of inertia of the gyromotor rotor in relation to the axis of rotation; A, BC - moments of inertia of the floater, cover and tilting in relation to axes X, Y and Z. Assuming, as it is in practice, that $\beta_1 = 0$ equations (1) are reduced to

$$\left.\begin{aligned} A_0\ddot{\alpha} + H\dot{\beta} + Hu_2 \sin\alpha = Q_\alpha \\ B_0\ddot{\beta} - H\dot{\alpha} + Hu_3\beta - Hu_1 = Q_\beta \end{aligned}\right\}. \qquad (2)$$

By doing so an error in α of less than 70" and β - less than 1-2" are introduced. As reversing points are observed, Eq. (2) gives precision of not less than 5-10" - for α and 0.1 - 0.2" for β. As β_1 is reduced to zero dH/dt is small and, therefore, the author neglects the variation of kinetic momentum and discusses four external torques: 1) Friction torque on the needle; 2) Liquid fric-

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The influence of external ...

tion torque; 3) Torque due to variation of positive or negative buoyancy of SE; 4) Torque due to electrical forces by interaction with conduction currents in the liquid. Consideration of torques 1) and 2) together with a pendulum torque leads to Eq.

$$a=(a_n-a_T)e^{-\gamma t}\left(\cos\delta t+\frac{1}{\delta_{sec}}\sin\delta t\right)+a_T, \qquad (7)$$

where a_n - amplitude of the n-th oscillation, a_T - friction amplitude. Analysis shows that friction may introduce a large error. To avoid this it is necessary to give a smooth surface to the SE, and use a liquid with low viscosity and low coefficient of thermal expansion. The optimum ratio of radii for needle and support is 1:3 - 1:4. A short analysis is made for the eccentricity between the geometrical center and the suspension point of the SE which involves precession of the gyro. A similar result is when the axis of symmetry of the SE is not vertical. It is not very important for the existing gyro $\Delta\alpha \sim 9''$. Torque 4) is due to the capacitive

Card 5/7

The influence of external ...

character of the terminal in the liquid. The approximate theory shows that in practical cases this torque was 4×10^{-4} g cm and, as a result $\Delta \alpha_2 \approx 90"$ - it is allowed to reach the value S-10". The design of a gyro needs constant checking of all elements which may introduce undesirable torques. There are 3 figures.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy marksheyderskiy institut (All Union Scientific Research Mining Institute)

SUBMITTED: November 14, 1960

Card 6/7

L 29906-66 EWT(d)/EWT(l) GW/GD

ACC NR: AP6007910 (A) SOURCE CODE: UR/0000/66/000/002/0017/0021

45
B

AUTHOR: Lavrov, V. N.; Zhitomirskiy, I. B.; Lukovatyy, Yu. S.

ORG: none

TITLE: Gyroscopic method of the determining of directional angles

SOURCE: Geodeziya i kartografiya, no. 2, 1966, 17-21

TOPIC TAGS: gyrocompass, angle measurement instrument, theodolite, surveying instrument

ABSTRACT: The MTl surveying gyrocompass with torsional suspension is described in detail. The compass is designed for underground and surface surveying and for problems requiring measurement of angles with a precision of 10-20". The gyrocompass weighs 47 lbs and consists of five parts: the gyroscope unit, angle measurement unit, tripod, controlling unit, and the electric power supply. The basic unit is an one-pendulum gyrocompass with a suspended sensitive element and a direct current conductor to the element. The controlling unit has a 3-phase transformer of 25 v, and amplifier, and pickup transformers. The power supply unit contains 22 electric cells. Directional angle α is computed by using the following formulas:

$$\alpha = A - \gamma = \Gamma + \delta - \gamma,$$

$$\delta = A_0 - \Gamma_0 = \alpha_0 - \Gamma_0 + \gamma_0,$$

UDC: 528.526.6

Card 1/2

L 29906-66

ACC NR: AP6007910

where A and A_0 are the true azimuths of initial and oriented sides, γ and γ_0 are the angles of the meridians C' and C" passing through the points of the compass setting on the initial and oriented sides, Γ and Γ_0 are gyrocompass azimuths and δ and δ_0 are the gyrocompass corrections. Observations carried out with 2 gyrocompasses in one of the Leningrad laboratories gave ±21" and ±10" as the mean deviations from the true values. Orig. art. has: 3 formulas, 1 table.

SUB CODE: 17,08

Card 2/2 UC

LAVROV, V.N., kand. tekhn. nauk; ZHITOMIRSKIY, I.B., kand. tekhn. nauk

New MV2 and MT1 gyrocompasses for surveying. Ugol' 40 no.1: 74-75 Ja '65. (MIRA 18:4)

1. Vsesoyuznyy nauchno-issledovatel'skiy marksheyderskiy institut.

ZHITOMIRSKIY, I.B.

Characteristics and technical requirements of new type mine surveyor gyrocompasses. Vop. prikl. gir. no.2:111-122 '60.
(MIRA 15:4)

(Gyrocompass) (Mine surveying--Equipment and supplies)

ANDON'YEV, S.M.; FILIPP'YEV, O.V.; ZHITOMIRSKIY, I.S.

New method for simulating the mixing of fuel, air, and oxygen in open-hearth furnaces. Inzh.-fiz.zhur. no.1:25-29 Ja '60. (MIRA 13:4)

1. Gosudarstvennyy nauchno-issledovatel'skiy i proyektnyy institut metallurgicheskoy promyshlennosti, "Giprostal," Khar'kov.
(Open-hearth furnaces)

ZHITOMIRSKIY, I. S., VASIL'YEV, A. G. and KLEMPNER, K. S.

"Statistical Reliability of Relay Devices in Steady State and Transient Processes"

paper presented at the All-Union Seminar on the Application of Radioactive Isotopes in Measurements and Instrument Building, Frunze (Kirgiz SSR), June 1961)

So: Atomnaya Energiya, Vol 11, No 5, Nov 61, pp 468-470

ACCESSION NR: AR4035550 S /0271/64/000/003/A006/A006

SOURCE: Ref. zh. Avtomat., telemekh. i vy*chisl. tekhn. Sv. t., Abs. 3A45

AUTHOR: Zhitomirskiy, I. S.; Vasil'yev, A. G.; Klempner, K. S.

TITLE: Statistical reliability of relay-type devices under steady-state and transient conditions

CITED SOURCE: Sb. Radioizotopn. metody* avtomat. kontrolya. T. 1. Frunze, AN KirgSSR, 1963, 31-41

TOPIC TAGS: relay reliability, contactless switch, register, statistical reliability

TRANSLATION: Reliability of operation is considered of relay-type devices (registers and contactless switches) under fluctuating-error conditions caused by the random nature of radioactive decay. One illustration. Bibliography: 4 titles.

DATE ACQ: 17Apr64 SUB CODE: IE ENCL: CO

Card 1/1

L 14576-66 EWT(1)/EWA(h) TG

ACC NR: AT5028941 SOURCE CODE: UR/0000/63/000/000/0031/0041

AUTHOR: Zhitomirskiy, I. S.; Vasil'yev, A. G.; Klempner, K. S. 37

ORG: none

TITLE: Statistical reliability of relay systems in stationary states and transient processes 25

SOURCE: Vsesoyuznyy seminar po primeneniyu radioaktivnykh izotopov v izmeritel'noy tekhnike i priborostroyenii. Frunze, 1961. Radioizotopnyye metody avtomaticheskogo kontrolya (Radioisotope methods of automatic control); trudy rasshirennogo soveshchaniya, v. 1. Frunze, Izd-vo AN KirgSSR, 1963, 31-41

TOPIC TAGS: reliability theory, electric relay, radioactive source, RADIOACTIVE DECAY

ABSTRACT: The paper deals with the reliability of a relay with respect to fluctuational errors caused by the random nature of radioactive decay. It is shown that the optimal measure of reliability for the operation of the instrument in a transient process is the probability of one and only one commutation of the relay during the interval of increase and decrease of the mathematical expectation of the control

Card 1/2

L 11576-66

ACC NR: AT5028941

signal. The optimal measure of reliability for contactless breakers is the probability of at least one commutation of the relay during the interval of increase and decrease of the mathematical expectation of the control signal. In addition to the earlier criteria of reliability of stationary regimes of relays, a new reliability criterion is introduced: the probability of the absence of relay commutations during a given time of operation in the stationary state. A numerical method of calculating reliability criteria is given. The use of this method presupposes the use of high speed computers. Orig. art. has: 1 figure, 31 formulas.

SUB CODE: 09,14/ SUBM DATE: 21Mar63/ ORIG REF: 002/ OTH REF: 000

Card 2/2

VASIL'YEV, A.G.; ZHITOMIRSKIY, I.S.; KLEMPNER, K.S.

Classification of relay devices with nuclear radiation sources.
Izm. tekh. no.7:53-56 Jl '63. (MIRA 16:8)

(Electric relays) (Nuclear instruments)

L 13319-63 EWT(d)/FCC(w)/BDS AFFTC IJP(C)

ACCESSION NR: AP3001457 S/0052/63/008/002/0156/0166

AUTHOR: Zhitomirskiy, I S. (Khar'kov) 54

TITLE: Distribution functions of first passage time

SOURCE: Teoriya veroyatnostey i yeye primeneniya, v. 8, no. 2, 1963, 156-166

TOPIC TAGS: Markov process, shot effect, first passage time

ABSTRACT: For a Markov process of infinite extent under certain conditions a partial differential equation is derived for the function G(t,M), whose value is the probability of staying in the set GAMMA from time 0 to time t and being in the set M at time t. G at t and GAMMA is thus the probability of staying in GAMMA from time 0 to time t; i.e. 1 minus the probability that first passage time from GAMMA exceeds t. Application is made to the case of shot noise, where a finite difference scheme is developed for numerical solution of probability of first passage time from the interval 0 to 1. In conclusion, the author wishes to express his gratitude to A. G. Vasil'yev and K. S Klempner for the posing of a practical problem whose generalized solution is this paper. Orig. art. has 48 formulas.

Card 1/1

ZHITOMIRSKIY, I.S.; KUZ'MINSKAYA, S.B.

Effect of a cooled wall on the temperature of the charge and a gas moving in the counterflow. Inzh.-fiz. zhur. 5 no.10:89-92 O '62. (MIRA 15:12)

1. Gosudarstvennyy institut po proyektirovaniyu predpriyatiy po proizvodstvu stali, g. Khar'kov.
(Blast furnaces)

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77830
SOV/103-21-2-10/14

AUTHORS: Vasil'ev, A. G., Zhitomirskiy, I. S., Klempner, K. S. (Kharkov)

TITLE: Reliability Criteria of Automatic Relay Arrangements With Radioactive Emitters

PERIODICAL: Avtomatika i telemekhanika, 1960, Vol 21, Nr 2, pp 245-253 (USSR)

ABSTRACT: The study determines the probabilities that the relay will maintain a given state, and an average number of "false" operations at a unit time as function of the system parameters. On the basis of previously published papers, the authors refer to the characteristic function of distribution of the random magnitude and the cumulatives of distribution. Applying these equations to devices in which the RC cell serves as an integrator, in order to determine the density of probability and the function of distribution, leads to very difficult calculations. Two expansions in a series for the density of probability p(x) and for the function of

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distribution F(x), both to be determined, are considered. The first and second expansion in a series, respectively, may be used for greater and smaller magnitudes of ν where

$$\nu = nRC, \qquad (5)$$

Here, n is the speed of calculation and RC is a resistance capacitance cell. Assuming that speed of calculation is constant and that the time when the system is in a steady-state condition is sufficiently long, the investigation of reliability of the system is reduced to an investigation of reliability of the stationary state. Thus, the following equations for density of probability p(x) and for function of distribution F(x) are derived:

$$p(x) = \frac{0,5}{\sqrt{\nu}}\Phi_1\left(\frac{z}{\sqrt{2}}\right) - \frac{0,0278}{\nu}\Phi_4\left(\frac{z}{\sqrt{2}}\right) + \frac{0,00520}{\nu^{3/2}}\Phi_5\left(\frac{z}{\sqrt{2}}\right) + \frac{0,00617}{\nu^{3/2}}\Phi_7\left(\frac{z}{\sqrt{2}}\right) -$$
$$- \frac{0,000834}{\nu^3}\Phi_6\left(\frac{z}{\sqrt{2}}\right) - \frac{0,87\cdot10^{-4}}{\nu^3}\Phi_8\left(\frac{z}{\sqrt{2}}\right) - \frac{3,58\cdot10^{-5}}{\nu^4}\Phi_{10}\left(\frac{z}{\sqrt{2}}\right) + \ldots \quad (9)$$

$$P(x) = 0,5 + \Phi(z) - \frac{0,0278}{\sqrt{\nu}}\Phi_3\left(\frac{z}{\sqrt{2}}\right) + \frac{0,00522}{\nu}\Phi_4\left(\frac{z}{\sqrt{2}}\right) + \frac{0,000773}{\nu}\Phi_6\left(\frac{z}{\sqrt{2}}\right) -$$
$$- \frac{0,000832}{\nu^{3/2}}\Phi_8\left(\frac{z}{\sqrt{2}}\right) - \frac{1,15\cdot10^{-4}}{\nu^{3/2}}\Phi_7\left(\frac{z}{\sqrt{2}}\right) - \frac{4,20\cdot10^{-5}}{\nu^{3/2}}\Phi_9\left(\frac{z}{\sqrt{2}}\right) + \ldots \quad (10)$$

$$\Phi(z) = \frac{1}{\sqrt{2\pi}}\int_0^z e^{-\frac{V^2}{2}}dV \quad (11)$$

Here Eq. 11 is the fixed Laplace function, $\Phi_n\left(\frac{z}{\sqrt{2}}\right)$ are the derivatives of the integral of probability, and z is the quotient of standard deviation. The second expansion in a series for smaller ν and greater z is similar to the method worked out by Maslov and

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Povzner in the study, "On Infinitesimal Operators of One Class of Markov Processes." Theory of Probability and Its Application. (Ob infinitezimalnykh operatorakh odnogo klassa markovskikh protsessov. Teoriya veroyatnostey i eye primeneniya), Vol 3, Nr 1 (1958). When the function of distribution is found by one of the above methods, the average time of the stay of the relay in a given state and the average number of "false" operations at a unit time may be determined easily. For a noninertial relay these problems are reduced to determining the number of intersections of the actual values of potential with the potential V_n at which a change in the relay state takes place. The downward ($S\downarrow$) and upward intersections ($S\uparrow$), respectively, correspond to states 1 $|\bar{v}| > |V_n|$ and 2 $|\bar{v}| < |V_n|$. The following equations for $S\downarrow$ and $S\uparrow$ are derived:

$$S^1 = n_0 p(x). \tag{29}$$

where n_0 is the threshold operation of the relay and

$$S^1 = np(x). \tag{30}$$

The average duration of overshooting for state 1 is given in the form:

$$T^1 = \frac{F(x)}{n_0 p(x)}, \tag{31}$$

and for state 2 in the form:

$$T^1 = \frac{1 - F(x)}{np(x)}. \tag{32}$$

For condition

$$\frac{1}{S^1} > T^1 \text{ or } \frac{1}{S^1} > T^1 \tag{33}$$

the distribution of the number of "false" operations is similar to the Poisson's distribution. Making use of the above equations, the curves in Fig. 1 are obtained, showing the probability that the potential is in "false" state, as function of n_0RC.

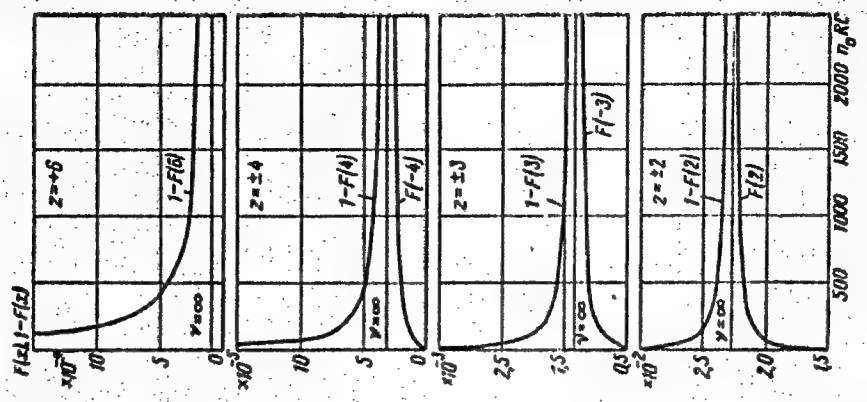


Fig. 1. Values of probability of potential being in "false" state.

The number of "false" intersections of the potential at a unit time as function of n_o, for various values of z and RC is shown in Fig. 2 (where n_o is threshold operation of the relay).

Card 6/8

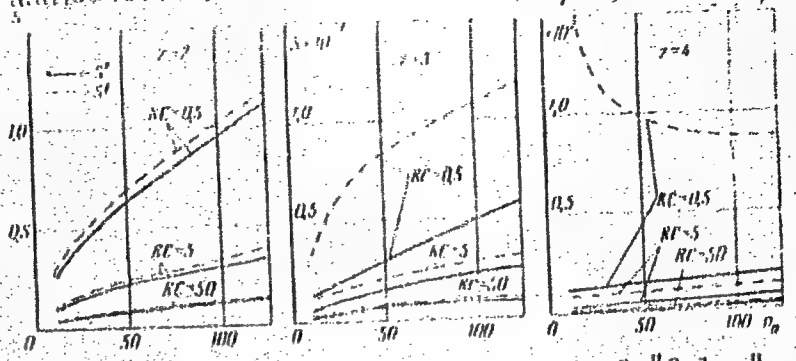


Fig. 2. Values of the average number of "false" intersections of potential in a unit time.

The average value of time when potential is in "false" state conditions for various γ, n_0, and RC is shown in Fig. 3. On the basis of results obtained, the relative time when the contacts of relay are in the "false" state and the number of "false" contact switchings may be determined for an actual relay of known characteristics. The assistance of L. K. Tatochenko

Card 7/8

is acknowledged. There are 3 figures and 6 Soviet references.

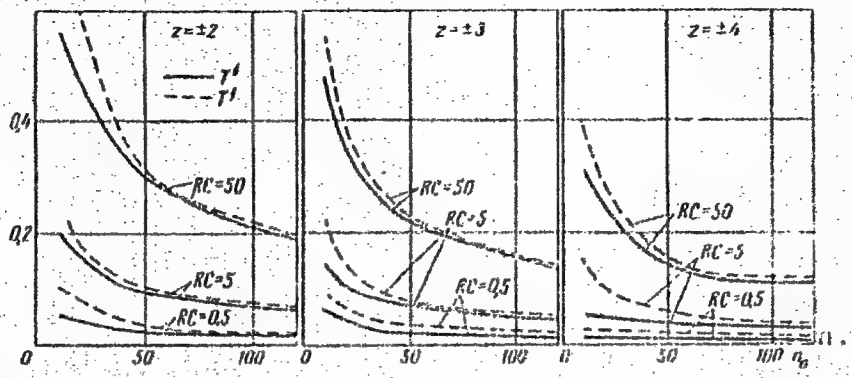


Fig. 3. Average values of "false" intersection.

SUBMITTED: June 17, 1959

Card 8/8

L 11995-66 EWT(l)/EWT(m)/T/EWP(t)/EWP(b)/EWA(c) IJP(c) JD/WW/JW/GG

ACC NR: AP5022865 SOURCE CODE: UR/0051/65/019/003/0409/0416

AUTHOR: Zhitomirskiy, I. S.; Chebanova, T. S.; Shakhnovich, M. I.

ORG: none

TITLE: Effect of self-shadowing on the coefficient of reflection from the cleaved surface of a single crystal

SOURCE: Optika i spektroskopiya, v. 19, no. 3, 1965, 409-416

TOPIC TAGS: single crystal, light reflection coefficient, geometric optics, lithium fluoride, ergodic theory

ABSTRACT: The authors study the shadowing of incident light by a randomly stepped surface in the geometrical-optics approximation, which is valid in those cases for which the wavelength of the light is appreciably less than the dimensions of the step. Probability theory is used to find the factor by which shadowing decreases the intensity of the reflected light. The reflection is assumed to take place sufficiently far from the edges of the sample so that the process can be regardes as stationary. The size of the reflecting region is also assumed to be much larger than the average spacing between the steps. Ergodic properties are then used to determine the fraction of the rays reflected in a given direction, which is assumed to equal the probability that a ray will strike the horizontal part of the surface and will be reflected without striking the surface again. The theoretical calculations were compared with experimental data obtained with a single crystal of LiF, whose

Card 1/2 UDC: 535.312

L 11995-66

ACC NR: AP5022865

cleavage surface had a well defined step structure. The widths and heights of the steps were measured with a microscope, and the coefficient of reflection was measured with SP-68 apparatus at 105 mm wavelength. The results of the experiments agreed well with the theoretical calculations. Orig. art. has: 3 figures, 35 formulas, and 1 table.

SUB CODE: 20/ SUBM DATE: 09Jan64/ ORIG REF: 005/ OTH REF: 001

Card 2/2

ZHITOMIRSKIY, L.Ya., inzh.

Ethylen apparatus for ripening tomatoes. Mashinostroenie no.1:93-94 Ja-F '65. (MIRA 18:4)

ZHITOMIRSKIY, L.Ya., inzh.

Comparative testing of the KGP-2 and K-3 potato harvesting combines. Mashinostroenie no.6:90-91 N-D '63. (MIRA 16:12)

ZHITOMIRSKIY, M.B., inzh.

New equipment manufactured by the Penza Compressor Plant. Khim. mashinostr. no. 6:5-6 N-D '62. (MIRA 17:9)

KURBATSKIY, I.L., inzh.; PETROV, I.P., inzh.; USTINOV, A.I., inzh.;
CHERNYY, A.A., inzh.; MURZIN, V.G., inzh.; ZHITOMIRSKIY, M.B., inzh.

Manufacture of large compressor parts from extra-strong cast iron.
Khim.mashinostr. no.5:36-37 S-O '63. (MIRA 16:10)

ZHITOMIRSKIY, M.B.

Some problems in the manufacture of compressors. Mashinostroitel' no.11:3 N '63. (MIRA 16:11)

1. Glavnyy konstruktor Penzenskogo kompressornogo zavoda.

B/184/62/000/006/001/003
D040/D112

AUTHOR: Zhitomirskiy, M.B., Engineer

TITLE: New production of the Penza Compressor Plant

PERIODICAL: Khimicheskoye mashinostroyeniye, no. 6, 1962, 5-6

TEXT: A brief review is made of the types of compressors produced by the Penzenskiy kompressornyy zavod (Penza Compressor Plant), one of the major Soviet producers of heavy-duty medium- and high-capacity air and gas compressors. A table lists 23 types of compressors produced, their capacity, size, pressure developed, piston stroke, r.p.m., electric motor capacity, number of stages and weight. Blueprints have been completed for the 2Г-900/4.5 (2G-900/4.5) and 3Г-220/13 (3G-220/13) compressors, which weigh up to 200 t without the motor and have capacities of 54,000 and 13,000 m^3/hr respectively. Serial production of automatic control panels for one of the compressor types was started in 1962. Preparations for production of a range of opposed-piston compressors initially developed by the Leningrad Branch of NIIKhIMMASh was started in 1961.

Card 1/2

S/184/62/000/006/001/008
D040/D112

New production of the Penza Compressor Plant

Such compressors will weigh 30-49% less and occupy 40% less floor space than other horizontal piston compressors (or have the double capacity for the same size) and require 30% less copper and mica for the motor. There is 1 table.

Card 2/2

SOV/86-58-8-34/37

AUTHOR: Zhitomirskiy, M.O., Engineer

TITLE: New Method for Calculating Some Performance Characteristics of Aircraft Equipped with Turbo-jet Engines, for Altitudes Above 11,000 Meters (Novyy metod rascheta nekotorykh letnykh kharakteristik samoleta s TRD dlya vysot N≥11000 m)

PERIODICAL: Vestnik vozdushnogo flota, 1958, Nr 8, pp 85-86 (USSR)

ABSTRACT: The author suggests a new method for a rapid calculation of some performance characteristics of turbo-jet aircraft at altitudes of 11,000 m or higher. Two graphs.

Card 1/1

ZHITOMIRSKIY, O.K.

Verscharfung eines Satzes-Von Woronoi. L., Zh. fiz-matem o-va,2 (1929), 131-151.
k neyevklidovoy geometrii krugov. L., zh; fiz- matem. o-vu, 1 (1926), 119-143.

SO: Mathematics in th USSR, 1917-1947
edited by Kurosh, A.G.,
Markushevich, A.I.,
Rashevskiy, P.K.
Moscow-Leningrad, 1948

ZHITOMIRSKIY, O. K.

"On the Non-Flexibility of Ovals," Dokl. AN SSSR, 25, No.5, 1939.

Inst. Math. and Mech., Leningrad State U.

ZHITOMIRSKIY, O.

Problems in projective geometry Moskva, Gos. izd-vo tekhniko-teoret. lit-ry, 1954. 184p. (55-57672)

QA471Z5

STAL'SKIY, Vladimir Vil'gel'movich; ZHITOMIRSKIY, Orest Romanovich; LIKHNITSKIY, M.I., nauchnyy red.; DOLMATOV, P.S., vedushchiy red.; SAFRONOVA, I.M., tekhn. red.

[Automation of main gas pipelines] Avtomatizatsiia magistral'nykh gazoprovodov. Leningrad, Gos. nauchno-tekhn. izd-vo neft. i gorno-toplivnoi lit-ry, 1961. 184 p. (MIRA 14:11)
(Gas, Natural--Pipelines)

1. ZHITOMIRSKIY, O.R.; MARTYNOV, A. N.

2. USSR (600)

4. Petroleum Industry

7. Comentary on the article by A. N. Glazkov and N. X. Movsesov "Problems in planning and construction of electric power supply to the petroleum industry. Energ.biul. no.7, 1952.

9. Monthly List of Russian Accessions, Library of Congress, January 1953. Unclassified.

ZHITOMIRSKIY, S., inzh.

Machine as designer. Tekh.mol. 31 no.4:22-23 '63. (MIRA 16:6)
(Mechanical drawing--Equipment and supplies)
(Automation)

ZHITOMIRSKIY, S.I., inzhener; VOROB'YEVA, I.A., inzhener.

Statistical control of induction motors in factory tests. Vest. elektroprom. 27 no.12:12-15 D '56. (MLRA 10:1)

1. Zavod imeni Vladimira Il'icha.
(Electric motors--Quality control)

ZHITOMIRSKIY, V.

How big is the Earth? Znan.sila no.6:34-35 Je '55. (MLRA 8:8)
(Earth)

ZHITOMIRSKIY, V.G.

Triangular automorphisms in groups. Sib.mat.zhur. 3 no.2:187-194 Mr-Ap '62. (MIRA 15:4)

(Groups, Theory of)

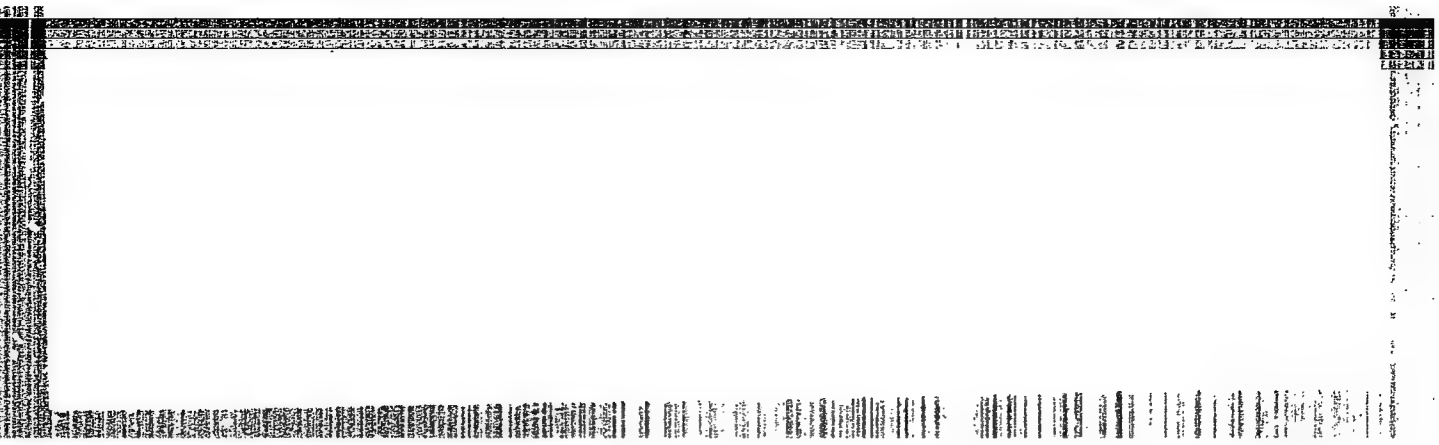
ZHITOMIRSKIY, V.G.

Triangular group of automorphisms of the direct product of groups. Mat. zap. Ural. mat. ob-va UrGu 4 no.1:40-44 '63. (MIRA 17:9)

ZHITOMIRSKIY, V.G.

Triangular groups of automorphisms of quasi-operator groups.
Dokl.AN SSSR 144 no.3:487-489 My '62. (MIRA 15:5)

1. Predstavleno akademikom A.I.Mal'tsevym.
(Groups, Theory of)



APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064820016-2"

AID P - 4916

Subject : USSR/Electronics

Card 1/2 Pub. 90 - 10/10

Author : Zhitomirskiy, V. I.

Title : Reply to a letter to the editor

Periodical : Radiotekhnika, 6, 74-76, Je 1956

Abstract : The author replies to a letter to the editor (this journal, #6, 1956) written by Ye. A. Khmel'nitskiy concerning an article by the author "Determination of probabilities of selective fading caused by interfering signals" (this journal, #10, 1955). The author disagrees as to the necessity of certain additional assumptions suggested by Ye. A. Khmel'nitskiy because some of them are self-evident and others were taken care of by his references to other works. He agrees as to the mistake in the formula and disagrees as to the final conclusion. According to the author, the real gain obtained with extended antennas depends not only on the signal level

Radiotekhnika, 6, 74-76, Je 1956 AID P - 4916

Card 2/2 Pub. 90 - 10/10

but also on the distribution of probabilities of the average levels of unwanted signals from interfering stations. Two diagrams. In a final note the editors conclude that the comments of Ye. A. Khmel'nitskiy were basically correct with exceptions to which they point. Both letters serve as a sufficient explanation of the problem.

Institution : None

Submitted : No date

ZHITOMIRSKIY, V. K., ed.

Kolebaniia valov aviatsionnykh dvigatelei; sbornik perevodov. Moskva, Oborongiz, 1941. 132 p., illus. (Trudy TSIAM.)

Includes bibliographies.

Title tr.: Vibration of shafts of aircraft engines; collected translations.

TL701. A1M72

SO: Aeronautical Sciences and Aviation in the Soviet Union, Library of Congress, 1955.

ZHITOMIRSKIY, V. K. ed.

Kolebaniia valov aviatsionnykh dvigatelei; sbornik perevodov. Moskva, Oborongiz, 1941. 132 p. illus. (Moskva, Tsentral'nyi institut aviatsionnogo motorostroeniia, Trudy.)

Includes bibliographies.

Vibration of shafts of aircraft engines; collection of translations.

DLC: TL702.C7Z48

SO: Manufacturing and Mechanical Engineering in the Soviet Union, Library of Congress, 1953.

ACC NR: AM6024647 Monograph UR/

Zhitomirskiy, Valentin Konstantinovich

Mechanical vibrations and methods of their damping (Mekhanicheskiye kolebaniya i praktika ikh ustraneniya) Moscow, Izd-vo "Mashinostroyeniye", 1966. 0174 p. illus., biblio. Errata slip inserted. 8,000 copies printed.

TOPIC TAGS: machine vibration, machinebuilding, nonlinear oscillation

PURPOSE AND COVERAGE: This book is intended for machinebuilding engineers and can also be useful to students of higher technical education institutes. In the book is briefly presented the theory of the vibration of mechanical systems, throwing light on some problems of vibration isolation, which determine the form of the natural oscillations of systems with many degrees of freedom; in addition, nonlinear oscillations, fluctuation, autovibration, and means recording vibrations are examined. Also discussed are means of eliminating vibrations which affect the normal operation of machines, and practical problems are presented. There are 17 references, 15 of which are Soviet.

TABLE OF CONTENTS (Abridged)

Card 1/2 UDC: 621-752

ACC NR: AM6024647

SUB CODE: 13/ SUBM DATE: 28Mar66/ ORIG REF: 014/ OTH REF: 003/

Card 2/2

ZHITOMIRSKIY, V. K. ed.

Maiatnikovyi dempfer malogo vesa dlia kolenchatykh valov aviatsionnykh dvigatelei. [Moskva] Oborongiz, 1942. 4 p. (Moskva, Tsentral'nyi nauchno-issledovatel'skii institut aviatsionnogo motorostroeniia, Trudy. No.43)

Low weight pendulum damper for crankshafts of aircraft engines.

DLC: Unclass.

SO: Manufacturing and Mechanical Engineering in the Soviet Union, Library of Congress, 1953.

ZHITOMIRSKIĬ, V. K.

Maiatnikovyi dempfer malogo vesa dlia kolenchatykh valov aviatsionnykh dvigatelei. Moskva, Oborongiz, 1942. 4 p. (TSIAM, Trudy, no.43)

Title tr.: Light pendulum dampers for crankshafts of aircraft engines.

TL701.A1M72 no. 43

SO: Aeronautical Sciences and Aviation in the Soviet Union, Library of Congress, 1955.

ZHITOMIRSKIY, V. K.

Krutil'nye kolebaniia valov aviatsionnykh dvigatelei. (In: Serensen, S. V. Dinamika i prochnost'kolenchatykh valov. Moskva, 1948. p.49-81, tables, diagrs., bibliography)

Title tr.: Torsinal vibrations of shafts in aircraft engines.

TJ182.S4

SO: Aeronautical Sciences and Aviation in the Soviet Union, Library of Congress, 1955.

IORISH, Yuliy Iosifovich; ANTSYFEROV, M.S., kandidat fiziko-matematicheskikh nauk, retsenzent; ZHITOMIRSKIY, V.K., doktor tekhnicheskikh nauk, redaktor; MATVEYEVA, Ye.N., tekhnicheskiy redaktor

[Vibration measurement; general theory, methods and instruments] Izmerenie vibratsii; obshchaia teoriia, metody i pribory. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. lit-ry, 1956. 403 p. (Vibration--Measurement) (MLRA 9:12)

DMITRIYEV, S.A.; KALATUROV, B.A., kand. tekhn. nauk; ZHITOMIRSKIY, V.K., doktor tekhn. nauk [translator].

"Prestressed reinforced concrete and its use in practice" [in German] by F. Leonhardt. Reviewed by S.A. Dmitriev, B.A. Kalaturov.
(Prestressed concrete construction)
(Leonhardt, F.)

DIMENTBERG, F.M.; SHATALOV, K.T.; GUSAROV, A.A.; ZHITOMIRSKIY, V.K., doktor tekhn. nauk, retsenzent; DANILOV, L.N., inzh., red.

[Vibrations of machinery] Kolebaniia mashin. Moskva, Mashinostroenie, 1964. 307 p. (MIRA 17:8)

DOLLEZHAL', Vladimir Antonovich, prof.; ZHITOMIRSKIY, V.K., doktor tekhn. nauk, retsenzent; KORABLEVA, R.M., inzh., red.; EL'KIND, V.D., tekhn.red.

[Rated load of gears] Raschetnaia nagruzka zubchatykh peredach. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit.lit-ry, 1957. 78 p. (MIRA 11:1)
(Gearing)

ZHITOMIRSKIY, V.K. [translator]; KOLTOVYY, B.I. [translator]; UZHIK, G.V., prof., red.; SIDOROV, V.Ya., red.; BELEVA, M.A., tekhn. red.

[High temperatures in aircraft structures; articles translated from the English] Problemy vysokikh temperatur v aviatsionnykh konstruktsiiakh; sbornik statei. Moskva, Izd-vo inostr. lit-ry, 1961. 595 p. (MIRA 14:12)

(High temperatures) (Thermal stresses) (Airplanes)

ZHITOMIRSKIY, V. K.

Cand. Medical Sci., -c1948-.

Mbr., Moscow Oblast Inst. Epidemiology, Microbiology, & Infectious Diseases im. I. I. Mechnikov, -c1949-.

"Prevention of the Introduction and Propagation of Infectious Diseases in Childrens' Institutions," Fel'dsher i Akusher. , No. 4, 1948;

"Diagnosis of Recurrent Typhus during the Apyretic Period," Sov. Med., No. 8, 1949.

SHLYAKHOV, E.N.; ZHITOMIRSKIY, V.K.[deceased]; TARKOV, M.I.; SUSLO, N.Ya; D'YAKOVA, V.S.

Active diagnosis of dysentery. Zhur.mikrobiol.epid. i immun. no.8:103-104 Ag '55. (MLRA 8:11)

(DYSENTERY--DIAGNOSIS)

ZHITOMIRSKIY, V.K. [deceased], PILOSOV, A.M.

Mechanism of Schwartzman's phenomenon. Trudy Stal.med.inst. 21:185-194 '56 (MIRA 11:8)

1. Iz kafedry mikrobiologii (zav. - dots.V.K. Zhitomirskiy [deceased]).
(INFLAMMATION)

ZHITOMIRSKIY, V.K.

USSR/Microbiology - Medical and Veterinary Microbiology F-4

Abs Jour : Referat Zhurn - Biol., No 16, 25 Aug 1957, 68620

Author : Shlyakhov, E.N., Zhitomirskiy, V.K., Tarkov, M.I., Suslova, N.Ya., Dyakova, V.C.

Title : The Active Exposure of Dysentery Bacteria Excretors in some Ordinarily Uninvestigated Population Groups.

Orig Pub : Sb. tr. Mold. n.-i. in-t Epidemiol., mikrobiol. i gigieni, 1956, No 1, 91-98

Abstract : The relative frequency of dysentery bacteria-carriers was investigated in several ordinarily uninvestigated groups of the population, for instance, pregnant women, confined ones, patients in surgical and therapeutic departments, patients with diseases of the digestive organs, also different ordinary diseases, and finally patients with infectious hepatitis. The huge majority of excretors are persons of 18-42 (85%). The main mass of people investigated (63.5%) were

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Abs Jour : Referat Zhurn - Biol., No 16, 25 Aug 1957, 68620

confined women. Most bacteria excretors belong to this group. The frequency of detection of dysentery bacteria excretion in pregnant women is 3.7%, in women in confinement, 9.94%. The excretion of dysentery bacilli among pregnant and confined women investigated was observed 4-5 times oftener than among normal ones. In bacteriological investigation of surgical and therapeutic patients predominately with diseases of digestive organs, patients with infectious hepatitis also manifested a large number of excretors of dysentery bacilli. The frequency of detection of carriers was least in May and sharply increased in September. The majority of isolated types belongs to the type of Flexner bacteria (89.1%), 9.2% to Newcastle and 1.7% to Sonne. The authors consider that for the purpose of exposure of dysentery bacteria carriers, a triple inspection in infectious disease departments of hospitals should be made for dysentery

Abs Jour : Referat Zhurn - Biol., No 16, 25 Aug 1957, 68620

bacteria in all patients with diseases of the digestive tract and also in patients with infectious hepatitis.

ZHITOMIRSKIY, Ya.I.

One condition for the correct solvability of the Cauchy problem for systems of partial linear differential equations with variable coefficients. Izv. vys. ucheb. zav.; mat. no.4:79-88 '60.

(MIRA 13:10)

1. Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova.
(Differential equations, Partial)

ZHITOMIRSKIY, Ya.I., Cand Phys Math Sci — (diss) "Concerning the Cauchy problem for systems of equations of partial derivatives with variable coefficients." Mos, 1959. 7 pp (Mos Order of Lenin and Order of Labor Red Banner State Univ im M.V. Lomonosov) 150 copies (KL, 36-59, 111)

ZHITOMIRSKIY, Ya.I.

Cauchy's problem for a parabolic system of linear partial differential equations with growing coefficients. Izv.vys.ycheb.zav.; mat. no.1: 55-74 '59. (MIRA 12:2)

1. Moskovskiy gosudarstvennyy universitet imeni M.V. Lomonosova.
(Differential equations, Partial)

Zhitomirskiy, Ya. I.

AUTHOR: ZHITOMIRSKIY, Ya.I. 20-6-4/42

TITLE: On Cauchy's Problem for Parabolic Equations of Second Order With Variable Coefficients (O zadache Koshi dlya parabolicheskogo uravneniya vtorogo poryadka s peremennymi koeffitsientami)

PERIODICAL: Doklady Akad.Nauk, SSSR, 1957, Vol.116, Nr 6, pp.913-916 (USSR)

ABSTRACT: The author considers the equation

$$(1) \qquad \frac{\partial u}{\partial t} + Lu = f(x,t) ,$$

where it is

$$L = -\sum_{i,j=1}^{n} \frac{\partial}{\partial x_i} a_{ij}(x) \frac{\partial}{\partial x_j} + \sum_{i=1}^{n} b_i(x) \frac{\partial}{\partial x_i} + c(x), \quad x = (x_1,\ldots,x_n)$$

and the following conditions are satisfied : 1. $a_{ij}(x) = a_{ji}(x)$;

2. $c(x) \geq -c$, $c > 0$; 3. $\sum_{i,j=1}^{n} a_{ij}(x)\xi_i\xi_j \geq \alpha^2 \sum_{i=1}^{n} \xi_i^2$ $(\alpha > 0)$.

According to a method due to Vishik [Ref.1] the author defines, by introducing certain Hilbert functional spaces, the notion of a generalized solution for the Cauchy and for the mixed problem

Card 1/2

On Cauchy's Problem for Parabolic Equations of Second Order With Variable Coefficients 20-6-4/42

corresponding to (1). Under the assumption that $\int_0^T (f,f)dt < \infty$, the existence and uniqueness of the generalized solutions is proved. There are 3 Slavic references.

ASSOCIATION: Moscow State University imeni M. V. Lomonosov(Moskovskiy gosudarstvenny universitet im. M.V.Lomonosova)

PRESENTED: By I.G.Petrovskiy, Academician, May 15, 1957

SUBMITTED: May 11, 1957

AVAILABLE: Library of Congress

Card 2/2

ZHITOMIRSKIY, YA. I.

USSR/Mathematics - Convergence, Numerical Series Jul/Aug 52

"Convergence of Certain Numerical Series," Ya. I. Zhitomirskiy

"Uspekh Matemat Nauk" Vol VII, No 4 (50), pp 153-156

Considers the conditions governing the convergence of numerical alternating series of the type $1/f(1) - 1/f(2) + 1/f(3) - \ldots$ with decreasing terms. Demonstrates theorem that the existence of a finite limit of the expression $\int_{2q(N)}^{2p(N)} dx/f(x)$, where p and q represent

225T63

number of pos and neg terms in the series in segment x=N (eventually N tends to infinity), is necessary and sufficient for the convergence of the series. Gives 3 simple examples.

225T63

USSR/Mathematics - Cauchy's theorem

Card 1/2 : Pub. 22 - 2/44

Authors : Zhitomirskiy, Ya. I.

Title : Cauchy's theorem (problem) for solution of systems of linear equations with partial derivatives and differential operators of Bessel's type

Periodical : Dok. AN SSSR 98/1, 9-12, Sep 1, 1954

Abstract : A class of functions satisfying Cauchy's theorem (problem) is sought. The following are the conditions for the class of functions mentioned: 1) it should include a solution $u(x,t)$ [at any $t \geqslant 0$] of the system of linear equations representing the Cauchy theorem, i.e.,

$$\frac{\partial u(x,t)}{\partial t} = p(B,t)u(x,t)$$

Institution : Kiev State University im. T. G. Shevchenko

Presented by : Academician A. N. Kolmogorov, May 31, 1954

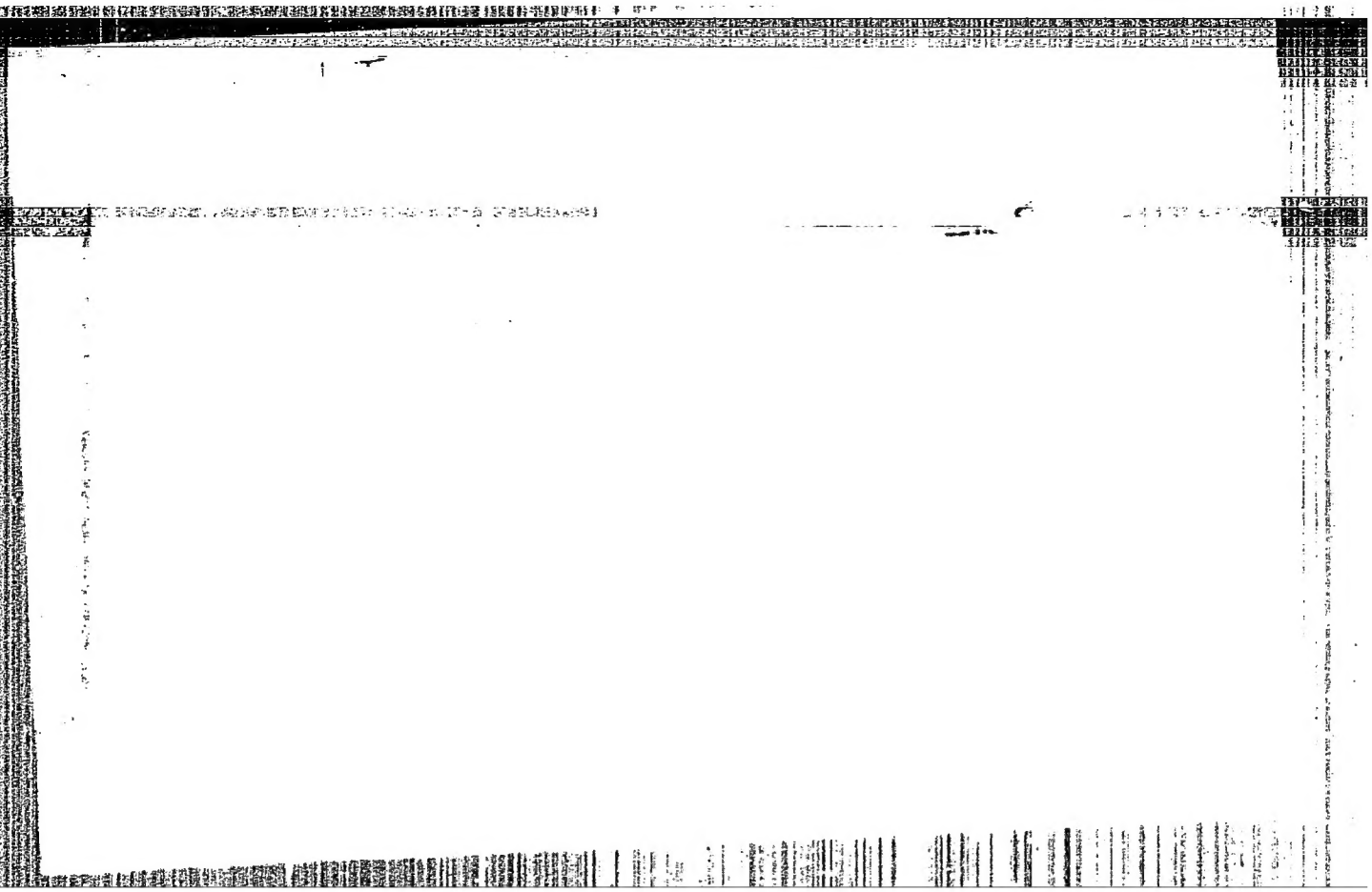
Periodical : Dok. AN SSSR 98/1, 9-12, Sep 1, 1954

Card 2/2 : Pub. 22 - 2/44

Abstract : and 2) the solution should satisfy initial and boundary conditions, i.e.,

$$u(x,0) = u_0(x); \left| \frac{\partial u(x,t)}{\partial x} \right|_{x=0} = 0.$$

A method of generalized functions, introduced by Gelfand and Shilov, is used for finding the functions. Five references (1938-1954).



16(1) SOV/140-59-1-7/25

AUTHOR: Zhitomirskiy, Ya.I.

TITLE: The Cauchy Problem for Parabolic Systems of Linear Partial Equations With Increasing Coefficients (Zadacha Koshi dlya parabolicheskikh sistem lineynykh uravneniy v chastnykh proizvodnykh s rastushchimi koeffitsiyentami)

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Matematika, 1959, Nr 1, pp 55-74 (USSR)

ABSTRACT: The author considers parabolic systems the coefficients of which for the not highest terms (with respect to the order of differentiation) in infinity have a potential order of increase depending on the order of the system and on the order of the derivative to which there belongs the coefficient. For such systems the author proves the existence of a fundamental matrix and this fundamental matrix and its derivatives are estimated. With the aid of the estimations the existence and uniqueness of the solution of the Cauchy problem in the classes of quickly increasing functions for the considered systems can be proved. It is shown that for quicker increasing coefficients even in the $L_2(-\infty, \infty)$ the uniqueness of the solution of the Cauchy

Card 1/2

The Cauchy Problem for Parabolic Systems of Linear Partial Equations With Increasing Coefficients SOV/140-59-1-7/25

problem can be disturbed. In a short survey the papers of I.G.Petrovskiy, S.Z.Bruk, O.A.Ladyzhenskaya, and S.D.Eydel'man are mentioned.
There are 10 Soviet references.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet imeni M.V.Lomonosova (Moscow State University imeni M.V.Lomonosov)

SUBMITTED: March 13, 1958

Card 2/2

~~16(1)~~ 16.3500

AUTHOR: Zhitomirskiy, Ya.I.

SOV/38-23-6-8/11

TITLE: The Cauchy Problem for Certain Types of "G. Ye. Shilov" Parabolic Systems of Linear Equations in Partial Derivatives with Variable Coefficients

PERIODICAL: Izvestiya Akademii nauk SSSR, Seriya matematicheskaya, 1959, Vol 23, Nr 6, pp 925 - 932 (USSR)

ABSTRACT: Let the system

(1) $\frac{\partial u(x,t)}{\partial t} = P\left(\frac{1}{i}\frac{\partial}{\partial x}\right) u(x,t)$

be given, where $u(x,t) = \{u_1(x,t),\ldots,u_N(x,t)\}$, $x = (x_1,..,x_n)$ and $P\left(\frac{1}{i}\frac{\partial}{\partial x}\right)$ is a matrix, the elements of which are polynomials of $\frac{1}{i}\frac{\partial}{\partial x_1}, \ldots, \frac{1}{i}\frac{\partial}{\partial x_n}$ with constant coefficients. Let $\lambda_1(s),\ldots,\lambda_N(s)$ be the roots of $\det \| P(s) - \lambda E \| = 0$ and

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